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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/069,572 | 02/27/2002 | Hideki Kanemoto | L9289.02128 | 1531 |

24257 7590 11/03/2004

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EXAMINER

GANTT, ALAN T

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2684

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,572

Applicant(s)

KANEMOTO ET AL.

Examiner

Alan T. Gantt

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,4,6-8,11,12,14 and 15 is/are allowed.
- 6) ☒ Claim(s) 5 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/27/02, 5/14/02
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 5 and 13 are objected to because of the following informalities: There is a general lack of clarity evident in the last limitation of these claims. Maybe a rearrangement of certain clauses will remedy this situation. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The examiner has made the assumption that applicant intends to state that the closer (in an angular perspective) the remote unit is to the base the higher the assignment order is given to that unit. The examination on merits is done passed on that assumption.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 8, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Pfeil et al.

Regarding claim 1, Pfeil discloses a method and apparatus for determining remote unit locations using phased array antenna elements and dynamically allocates radio frequency receive path resources as required by a programmable location engine. The location engine employs cascaded time of arrival and direction of arrival algorithms to determine per remote unit location data meets the limitation. An RF switching matrix and mobile location shared resource controller dynamically switch the plurality of radio frequency receivers to receive the different carriers on each of the different phased antenna elements to determine time of arrival information and alternately receive a same carrier signal over all or a portion of the antenna element to determine direction of arrival information (Abstract). Thus, Pfeil meets the following limitations for a base station apparatus:

an estimator that estimates a direction of arrival of a signal transmitted from each communication terminal apparatus; (col. 5, lines 38-57 – direction of arrival algorithm)

a determiner that determines an assignment order of a shared channel that is shared by a plurality of communication terminal apparatuses and assigned on a per predetermined transmission unit basis, in association with the direction of arrival; (col. 6, line 55 to col. 7, line 32) and

a transmitter that forms a directivity for the direction of arrival and transmits a shared channel signal to said each communication terminal apparatus in accordance with the order. (Since the resource allocation has to get back to the mobile unit, a transmitter is inherently required to deliver to this allocation.)

Regarding claim 9, Pfeil discloses a method and apparatus for determining remote unit locations using phased array antenna elements and dynamically allocates radio frequency receive path resources as required by a programmable location engine. The location engine employs cascaded time of arrival and direction of arrival algorithms to determine per remote unite location data meets the limitation. An RF switching matrix and mobile location shared resource controller dynamically switch the plurality of radio frequency receivers to receive the different carriers on each of the different phased antenna elements to determine time of arrival information and alternately receive a same carrier signal over all or a portion of the antenna element to determine direction of arrival information (Abstract). Thus, Pfeil meets the following limitations for a radio communication method:

an estimator that estimates a direction of arrival of a signal transmitted from each communication terminal apparatus; (col. 5, lines 38-57– direction of arrival algorithm)

a determiner that determines an assignment order of a shared channel that is shared by a plurality of communication terminal apparatuses and assigned on a per predetermined transmission unit basis, in association with the direction of arrival; (col. 6, line 55 to col. 7, line 32) and

a transmitter that forms a directivity for the direction of arrival and transmits a shared channel signal to said each communication terminal apparatus in accordance with the order. (Since the resource allocation has to get back to the mobile unit, a transmitter is inherently required to deliver to this allocation.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfeil et al.

Regarding claims 2 and 10, Pfeil does not specifically state that the closer (in an angular perspective) the remote unit is to the base, the higher the assignment order is given to that unit.

However, Pfeil does suggests such a limitation since it would have been obvious that, if direction of arrival does matter with respect to resource allocation then it would be normal to deal with such arrivals as the scanning process scans its field (col. 8, line 64 to col. 9, line 35).

Allowable Subject Matter

Claims 3-8 and 11-15 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 3, 11, 16, a determining step in determining an assignment order of a shared channel according to a value calculated from a priority assigned in association with downlink channel quality was neither found, suggested, nor made evident by the prior art.

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Regarding claims 4, 5, and 12, a transmitting step that includes transmitting a dummy signal, where the transmission power is increased gradually up to a predetermined transmission power value of a shared channel signal was neither found, suggested, nor made evident by the prior art.

Regarding claim 5, 6, 13, and 14, a transmission power controlling feature, in addition to a feature utilizing the assigning of resource allocation in association with the direction of arrival of the signal was neither found, suggested, nor made evident by the prior art.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Raleigh discloses adaptive beam forming utilizing a phased array for transmitter operation where there is not knowledge of array geometry or mobile feedback.

Any inquiry concerning this communication from the examiner should be addressed to Alan Gantt at telephone number (703) 305-0077. The examiner can normally be reached

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between 9:30 AM and 6 PM within the Eastern Time Zone. The group FAX number is (703) 872-9306.

Any inquiry of a general nature or relating to this application should be directed to the group receptionist at telephone number (703) 305-4700.

Alan T. Gantt

Alan T. Gantt

October 29, 2004

Nick Corsaro

**NICK CORSARO
PRIMARY EXAMINER**